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C/- Built Pty Limited
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Lambton Road NSW 2292

Project 91667.02
26 March 2019
R.005.DftB
MJB:plh

Attention: Sita Vasanthakumar

Email: sita@built.com.au

Dear Sita Vasanthakumar

Long-term Site Management Plan
Proposed Nihon University
9 Church Street, Newcastle

1. Introduction

This Long-term Site Management Plan (SMP) provides procedures for long term management of contaminated soils, which are present within the subject site shown on Drawing 1 attached.

Contaminated soils/fill containing Polycyclic Aromatic Hydrocarbons (PAH), heavy metals, bonded asbestos-containing materials and petroleum hydrocarbons are present within the site due to uncontrolled historic fill and demolition of structures within the site. Based on the results of previous assessments at the site, the remediation strategy for the proposed redevelopment comprised the management of impacted soils under structures, pavements, or beneath 'clean' soil capping.

On-site management (capping) of contaminated soils was conducted in a controlled manner with reference to regulatory requirements and the Remediation Action Plan (RAC) for the site (DP, 2020a) to render the site suitable for use as a university campus. Details of remediation and validation works are provided in the validation report for the site (DP, 2020b). In summary, the impacted soils were capped beneath existing and proposed buildings, new pavements and landscape areas, as shown on Drawing 1 attached. It is noted that the capped area excludes a variable width easement for services along the western boundary of Lot 1, DP1199904, which falls outside the development footprint, and a Hunter Water Corporation (HWC) stormwater service easement through the site which was validated and backfilled with 'clean soil' as part of the remediation works.

The objective of the SMP is to prevent and manage breaching of the cap. The SMP promotes awareness of the contamination management and the requirements to avoid disturbance (where possible) and provides an outline of maintenance requirements.

This SMP should be incorporated into the Nihon University overall property management plans/procedures to allow implementation of the management procedures within this plan for routine maintenance and for targeted subsurface works if and when required within the site. The requirement for ongoing site management should be noted on the appropriate planning certificate and title information for the site.

Implementation and enforcement of this SMP should remain until such time that specific additional assessment is conducted at the site that finds that the SMP is no longer required. Any such additional assessment and subsequent removal of the SMP requirements should be subject to review and approval by a NSW EPA-accredited Auditor, or the NSW EPA.

The remediation and validation and long-term site management plan is subject to review by Mr Ian Gregson, a NSW EPA-accredited Auditor.

2. Site Description

The site is described as part Lot 1 DP 1199904, 9 Church Street, Newcastle, NSW and comprises a rectangular shaped area of approximately 4880 m². The site (for the purposes of this SMP) excludes a variable width easement for services along the western boundary of Lot 1 which falls outside the development footprint.

The site was formerly known as the Newcastle Courthouse and comprised three adjoining structures – the original Courthouse, the Administration Building and the Supreme Court Building with a rear carpark (south-east corner) and landscape areas.

The site is shown on Drawing 1 in Appendix C.

The results of previous investigation at the site by DP and others indicated the presence of PAH, heavy metal, bonded asbestos and localised TRH (long-chained) contaminated soil/fill across the site. Remediation of the identified contamination impacts was required to render the site suitable for the long-term university campus site use.

3. Site Development / Location of Capping

The university development included construction of two four-storey buildings consisting of a 108 bed 'Student Accommodation Building' (east wing) and an 'Education Building' (west wing), both connected to the central 'Public Building' (former Courthouse) by atria. A carpark for 20 cars is contained on the lowest level of the 'Education Building'. The three buildings are surrounded by landscape areas and concrete pavements (driveway).

The site condition as of **date** (completion of construction) is shown in Figures 1 to **XX** below.

Management of contaminated soils within the site has been achieved as follows:

- Via capping with at least 0.3 m of validated 'clean' natural soils from within the site (i.e. from site excavations during construction) or imported VENM/ENM above an orange geofabric layer, within landscape areas;
- Via capping with concrete pavements (buildings and driveways) above a black plastic marker layer in all other areas of the site.

Placement of the orange geofabric marker layer and fill/capping construction within landscape is shown in Figures XX to YY below.

Placement of the orange geofabric marker layer, stormwater piping and backfill with clean imported soil within the stormwater easement is shown in Figures XX to YY below.

Placement of the black plastic marker layer and concrete pavement construction within buildings and driveways is shown in Figures XX to YY below.

It is noted that crushed demolition waste (concrete/brick) together with imported fine crushed rock was also utilised on-site during construction beneath capping in some areas.

Drawing 1 attached indicates the location of the areas to be managed under this SMP. As a precautionary measure, all materials beneath the marker layers, pavements or buildings in the areas indicated on Drawing 1 should be treated as potentially contaminated in the event that the capping is penetrated. It is noted that the HWC easement located parallel to the eastern side of the former Courthouse (Now central Public Building) was backfilled with 'clean' materials and therefore does not require management under this SMP.

It is noted that subsurface investigations within the site indicated the presence of elevated PAH, heavy metal, bonded asbestos and localised TRH (long-chained) concentrations in soil/fill, above the adopted RAC. The elevated PAH, heavy metal, bonded asbestos and localised TRH (long-chained) concentrations in soil were not considered to constitute a gross human health or environmental risk, therefore the area was managed via construction of a capping layer as a conservative measure.

4. On-site Management (Capping) of Contaminated Soils

The long-term management of contaminated soils located within the capped areas of the site will be achieved by maintaining the cap. This will confirm that the site remains suitable for use as a university campus.

A summary of affected parties and responsibilities is provided in Table 1 below.

Table 1: Responsibilities/Actions for Personnel

Personnel	Responsibilities
Newcastle City Council	<ul style="list-style-type: none"> • Notification on titles/planning certificates.
Nihon University – Chancellor/Executive	<ul style="list-style-type: none"> • Updating property management records and procedures; • Provision of university policy for management of impacted soils; • Notification of site management in university-specific documentation, capital works programs, maintenance etc. • Informing staff of the soil management; • Create/amend university policy for maintenance staff and subcontractors; • Preparation of site-specific maintenance procedures and record keeping with university maintenance staff; • Documenting changes and/or disturbances to capping.
Nihon University – Maintenance Staff	<ul style="list-style-type: none"> • Implementation of SMP; • Preparation of site-specific maintenance procedures and record keeping; • Routine checks of managed areas to confirm cap integrity (e.g. quarterly or during routine maintenance inspections); • Implementation of induction procedures for new maintenance staff, subcontractors and site workers; • Reinstatement of capped areas following cap penetration; • Generation of records to confirm reinstatement of capping; <p>Documenting changes and/or disturbances to capping.</p>

Table 1: Responsibilities/Actions for Personnel (cont)

Personnel	Responsibilities
Subcontractors/site workers	<ul style="list-style-type: none"> • Read SMP; • Preparation of SWMS for site works, taking into account working in managed areas; • Reinstatement of capped areas following cap penetration; • Generation of records to confirm reinstatement of capping; • Documenting changes and/or disturbances to capping.

The site management (Nihon University, University Chancellor and maintenance staff) will be responsible for the implementation of the SMP. The Chancellor will also be responsible for notifying all personnel whose activities may impact on managed areas under building slabs, concrete pavements or capped landscaped areas. All designated personnel must read and understand the provisions of the SMP.

A notation should be placed on the Section 10.7 certificate for the site, indicating that contaminated soils are present and capped on-site as shown on Drawing 1 attached.

Regular inspections should be conducted within the site to confirm the integrity of capping. Capping should be repaired as soon as possible if damaged.

Any activities which require excavation/disturbance of greater than 0.3 m depth within the landscaped areas or any excavation through the eastern concrete driveway or concrete building slabs (ie excavations, repairs or installation of additional services), should be conducted in the manner described below.

As a precaution, a contractor licensed to handle asbestos waste should be engaged. The contractor should prepare a safe work method statement (SWMS) prior to conducting the work in accordance with relevant regulatory and statutory requirements (including the Worksafe Australia Asbestos Code of Practice), which will generally include the following:

- Prepare temporary areas to receive clean and contaminated soils resulting from excavations;
- Careful excavation and segregation of overlying clean soils (ie to expose the orange geofabric marker / separation layer without damaging it) in areas managed via soil capping;
- Cut orange geofabric marker / separation layer and carefully excavate and segregate contaminated soils to minimise cross contamination with clean soils;
- All materials below concrete slabs in the capped areas should be assumed to be contaminated;
- Conduct the works with minimal disturbance of contaminated soils;
- Remove, classify, transport and dispose any excess contaminated soils in accordance with regulatory requirements;
- Reinstall contaminated soils beneath the geofabric marker layer where practical, and reinstall the orange geofabric marker / separation layer, clean cap and/or concrete slab above the contaminated soils;

- Provide documentation of the activities that disturb capping (ie location, depth, evidence of cap reinstatement).

All operations and activities conducted on the site must comply with the provisions of relevant NSW WHS legislation, and should include measures to minimise migration/cross contamination of contaminated soils. The SWMS should be reviewed by the principal/project manager prior to the works.

A qualified contaminated land consultant should undertake inspections during and following the completion of the works to confirm the following:

- The work was conducted in accordance with the approved SWMS;
- The work has not resulted in any adverse human health or environmental impact;
- Site capping has been appropriately reinstated;
- Site remains suitable for use as a university campus.

Any observed defects or damage to the capped area should be reported to the Chancellor and university maintenance staff.

Emergency contact details for relevant personnel including the Nihon University, Chancellor, Maintenance Manager, Council and after hours contact are provided in Table 2 attached.

The above EMP has been prepared in general accordance with current professional and industry standards for the management of land contamination.

Notwithstanding the above recommendations, any work associated with the handling or disposal of contaminated soils should be conducted in accordance with the relevant statutory and regulatory requirements.

This SMP should be regularly reviewed to confirm its suitability for continued use. The SMP should be revised/updated should the provisions of the SMP not cover site activities adequately. Any revisions of the SMP that decrease the level of site management will require the approval of a NSW EPA-accredited site auditor or the NSW EPA.

5. References

DP (2020), *Remediation Action Plan, Proposed Nihon University, 9 Church Street, Newcastle*, Report 91667.02.R.004.Rev0, Douglas Partners Pty Ltd.

DP (2020), *Validation of Remediation, Proposed Nihon University, 9 Church Street, Newcastle*, Report 91667.02.R.006.Rev0, Douglas Partners Pty Ltd.

6. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report for this project at 9 Church Street, Newcastle with reference to DP's proposal NCL190520.P.001.Rev1 dated 16 September 2019 and email variation of 12 November 2019 and acceptance received from Sita Vasanthakumar of Built Pty Limited dated 30 October 2019 and 15 November 2019 on behalf of Nihon Daigaku Australia Newcastle Pty Ltd. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Nihon Daigaku Australia Newcastle Pty Ltd and Built Pty Limited for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during the previous investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility. Due to time constraints, 'post-demolition' investigations were undertaken during the course of site demolition as requested by the developer/client. Parts of the site were therefore not accessible for inspection/investigation. Further inspection/investigation will therefore be conducted during site remediation to confirm site conditions.

Asbestos has been detected by observation and by laboratory analysis, either on the surface of the site, or in filling materials at the test locations sampled and analysed. Building demolition materials, such as concrete, brick, tile, wood, glass, metal and bitumen, were located in below-ground filling, and these are considered as indicative of the possible presence of hazardous building materials (HBM), including asbestos.

Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the site that have not been sampled and analysed. This is either due to undetected variations in ground conditions or to budget constraints (as discussed above), or to parts of the site being inaccessible and not available for inspection/sampling, or to vegetation preventing visual inspection and reasonable access. It is therefore considered possible that HBM, including asbestos, may be present in unobserved or untested parts of the site, between and beyond sampling locations, and hence no warranty can be given that asbestos is not present.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

The contents of this report do not constitute formal design components such as are required, by the Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction and the controls required to mitigate risk. This design process requires risk assessment to be undertaken, with such assessment being dependent upon factors relating to likelihood of occurrence and consequences of damage to property and to life. This, in turn, requires project data and analysis presently beyond the knowledge and project role respectively of DP. DP may be able, however, to assist the client in carrying out a risk assessment of potential hazards contained in the Comments section of this report, as an extension to the current scope of works, if so requested, and provided that suitable additional information is made available to DP. Any such risk assessment would, however, be necessarily restricted to the (environmental / groundwater) components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

Please contact the undersigned if you have any questions on this matter.

Yours faithfully

Douglas Partners Pty Ltd

Reviewed by

Matthew Blackert

Associate

Chris Bozinovski

Principal

Attachments: Table 2: Emergency Contacts
 Table 3: Capping/Condition Inspection Guide
 Notes Relating to This Report
 Drawing 1 - Site Plan
 As-Built Drawings
 Survey of Capped Areas
 Material Movement Plan

Table 2: Emergency Contacts

Name	Contact Phone Number
Emergency Services (Fire Brigade, Ambulance, Police)	000
Nihon University	TBC
Chancellor – Nihon University	TBC
Maintenance Manager – Nihon University	TBC
After Hours Contact	TBC
Newcastle City Council	TBC

This table is to be regularly updated by the site owner, managers or their representatives.

Table 3: Capping/Condition Inspection Guide

No.	Visual Check	Pass / Fail	Fault / Action Required / Comments
1	Building slab (condition, cracking, staining, evidence of damage)		
2	Outdoor pavers condition (cracked, broken, shifted, uneven, visible bedding material)		
3	Condition of garden areas (i.e. thickness of cap retained, evidence of visible marker layer at the surface, vegetation stress)		
4	Condition of turf areas		
5	Condition of stormwater/drainage infrastructure - pipes and subsurface grates/pits etc. (cracking, broken, evidence of flooding, siltation)		
6	Condition of slab penetrations (e.g. footings of outdoor structures, drainage/sewer pipes)		
7	Overall building condition		
8	Evidence of unauthorised excavation/penetration of capping and marker layer or pavements		